

REMARKS

A. Background

Claims 1-16 were pending in the application at the time of the Office Action. Claims 1-16 were rejected as being anticipated by and/or obvious over cited art. By this response applicant has cancelled claims 2 and 5-15; amended claims 1, 3, and 16; and added new claims 17-21. As such, claims 1, 3, 4, and 16-21 are presented for the Examiner's consideration in light of the following remarks.

B. Proposed Claim Amendments

Applicant has herein amended claims 1, 3, and 16 and add new claims 17-21 to further clarify, more clearly define, and/or broaden the claimed inventions to expedite receiving a notice of allowance. For example, claim 1 has been amended to incorporate the limitations of claims 2, 5, and 8-10; to clarify that the current-blocking layer is a single layer; and to recite that the p-type substrate is a "p-type InP substrate doped with Zn." Claim 16 has been amended to incorporate similar claim limitations as those added to claim 1. The amendments to the claims are supported in the application at least by paragraphs [0022]-[0024] in the specification. In view of the foregoing discussion, applicant submits that the amendments to the claims do not introduce new matter and entry thereof is respectfully requested.

C. Rejection Based on 35 USC § 102

Pages 2 and 3 of the Office Action reject claims 1, 8, and 11-16 under 35 USC § 102(b) as being anticipated by Japanese Publication No. 03-053582 to Takahiro et al. ("*Takahiro*"). Inasmuch as claims 8 and 11-15 have been canceled hererin, the rejection of those claims has

been rendered moot. Regarding the rest of the rejection claims, Applicant respectfully traverses this rejection and submits that *Takahiro* does not anticipate claims 1 and 16 because *Takahiro* does not include each and every claim limitation recited in the rejected claims.

As shown in Figure 3 and discussed in the partial English translation previously submitted by Applicant, *Takahiro* discloses a semiconductor laser having an Fe-doped high-resistance InP layer 12 acting as a current-blocking layer disposed over a Zn-doped p-type InP substrate 21. Because of the problems caused by inter-diffusion between the Zn dopant of the substrate 21 and the Fe dopant of the current-blocking layer 12, a Ti-doped diffusion restraint layer 15 is disposed between the substrate 21 and the current-blocking layer 12. For more discussion of these inter-diffusion problems, see paragraphs [0019]-[0020] of the specification of the present application.

In light of the above discussion, Applicant submits that *Takahiro* does not disclose or suggest a current-blocking layer that “is a single layer and a high-resistive layer made of InP crystal doped with Ru,” as recited in amended claim 1, or “burying a current-blocking layer which is a single layer and made of an InP crystal doped with Ru in both sides of said mesa stripe-shaped stacked body,” as recited in amended claim 16.

D. Rejection Based on 35 USC § 103

Pages 3 and 4 of the Office Action reject claims 2-7 under 35 USC § 103(a) as being obvious over *Takahiro* in view of U.S. Publication No. 2004/0057483 to Takemi et al. (“*Takami*”). *Takemi* is merely cited for allegedly teaching using a group VI element as the n-type dopant, using selenium as the n-type dopant, using selenium at a particular concentration, and using an InP crystal as the semiconductor crystal. As noted above, claim 1 has herein been

amended to incorporate the limitations of claims 2 and 5. Applicant submits that the added limitations of prior claims 2 and 5 do not cure the deficiencies of claim 1, as discussed above. Furthermore, inasmuch as claims 2 and 5-7 have been canceled herein, the rejection of those claims has been rendered moot. Regarding the rest of the rejected claims, Applicant respectfully submits that the allegedly obvious combination would not include all of the claimed limitations.

That is, claims 3 and 4 depend from claim 1 and thus incorporate the limitations thereof. As such, applicant submits that claims 3 and 4 are distinguished over the cited art for at least the same reasons as discussed above with regard to claim 1. Accordingly, Applicant respectfully requests that the obviousness rejection with respect to claims 3 and 4 be withdrawn.

Pages 4 and 5 of the Office Action reject claims 9 and 10 under 35 USC § 103(a) as being obvious over *Takahiro* in view of U.S. Publication No. 2002/0168856 to Iga et al. ("*Iga*"). *Iga* is merely cited for allegedly teaching using a high-resistive layer doped with ruthenium. As noted above, claim 1 has herein been amended to incorporate the limitations of claims 9 and 10 and claims 9 and 10 have been canceled herein. Applicant submits that the added limitations of prior claims 9 and 10 do not cure the deficiencies of claim 1, as discussed above. Furthermore, inasmuch as claims 9 and 10 have been canceled herein, the rejection of those claims has been rendered moot.

No other objections or rejections are set forth in the Office Action.

E. New Claims

Applicant submits that new claims 17-21 are distinguished over the cited art. For example, claim 18 recites that “the current-blocking layer is disposed directly on the p-type InP substrate so as to contact the p-type InP substrate,” and claim 19 recites that “the n-type over-cladding layer is disposed directly on the current-blocking layer so as to contact the current-blocking layer.” Applicant submits that none of the cited art, taken together or separately, disclose these limitations in conjunction with the other limitations of claim 1, from which claims 18 and 19 depend.

Claim 20 recites that “burying a current-blocking layer in both sides of said mesa stripe-shaped stacked body comprises growing the current-blocking layer directly on the p-type InP substrate,” and claim 21 recites that “forming an over-cladding layer comprises growing the over-cladding layer directly on the current-blocking layer.” Applicant submits that none of the cited art, taken together or separately, disclose these limitations in conjunction with the other limitations of claim 16, from which claims 20 and 21 depend.

Furthermore, claims 17-21 depend from claim 1 or claim 16 and thus incorporate the limitations thereof. As such, applicant submits that claims 17-21 are distinguished over the cited art for at least the same reasons as discussed above with regard to claims 1 and 16.

F. Conclusion

Applicant notes that this response does not discuss every reason why the claims of the present application are distinguished over the cited art. Most notably, applicant submits that many if not all of the dependent claims are independently distinguishable over the cited art.

Applicant has merely submitted those arguments which it considers sufficient to clearly distinguish the claims over the cited art.

In view of the foregoing, applicant respectfully requests the Examiner's reconsideration and allowance of claims 1, 3, 4, and 16-21 as amended and presented herein.

The Commissioner is hereby authorized to charge payment of any of the following fees that may be applicable to this communication, or credit any overpayment, to Deposit Account No. 23-3178: (1) any filing fees required under 37 CFR § 1.16; (2) any patent application and reexamination processing fees under 37 CFR § 1.17; and/or (3) any post issuance fees under 37 CFR § 1.20. In addition, if any additional extension of time is required, which has not otherwise been requested, please consider this a petition therefor and charge any additional fees that may be required to Deposit Account No. 23-3178.

In the event there remains any impediment to allowance of the claims which could be clarified in a telephonic interview, the Examiner is respectfully requested to initiate such an interview with the undersigned.

Dated this 17th day of November 2008.

Respectfully submitted,

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